



NEWS! From the NAVAL OBSERVATORY

U.S. NAVAL OBSERVATORY

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U.S. Naval Observatory Press Release

For immediate release,
September 16, 2005

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Naval Observatory Flagstaff Station Celebrates First Half Century

This month, the U.S. Naval Observatory's Flagstaff Station will celebrate the 50th anniversary of its establishment as the USNO's dark-sky observing site. This milestone will be marked by a public Open House, followed by an official ceremony and commemoration on September 21st at the Flagstaff Station. Representatives of the U.S. Navy, government and community leaders, and members of astronomical institutions from Arizona and across the country will gather at the observatory to celebrate 50 years of achievement and service to the astronomical community and the nation. The Open House will take place from 1:00 to 4:00 PM as a way of saying "thank you" and to recognize the support of the City of Flagstaff, Coconino County and the State of Arizona, which is internationally recognized for its leadership in astronomical research. It will feature tours of the Station's main buildings and telescopes and is free to all visitors.

Established in 1830 to support the navigational needs of the fledgling U.S. Navy, the Naval Observatory was largely dependent on visual observing while the rest of the astronomical world began embracing the exciting new technology of photography. In an effort to revitalize its mission, the Observatory embarked on a modernization campaign in the 1920s. At that time, a new telescope design, developed by George Willis Ritchey and Henri Chrétien, was being recognized as a major improvement over traditional reflecting telescopes, providing a very large field of view largely free of image distortions that plagued the older designs. Funding was eventually secured to build a 40-inch Ritchey-Chrétien telescope, the largest ever built up to that time, and the telescope was fabricated and installed at the Naval Observatory in Washington, DC in 1934. Ritchey himself supervised the construction.

Unfortunately, local conditions in Washington had deteriorated, hindering the unique capabilities of this instrument, and for nearly 15 years it produced little useful data. This state of affairs changed dramatically with the hiring of John S. Hall, who had until that time been associated with academic institutions. He was offered a position at the Naval Observatory as Director of the Equatorial Division, with the promise that most of his time could be spent in astrophysical research. Upon arriving at USNO, Hall immediately made use of the 40-inch telescope to make the important discovery of polarization of starlight by the interstellar medium. Other groundbreaking research followed, but it was becoming obvious that the bright night skies in the nation's capital were severely limiting observations. The telescope would have to be relocated to a more favorable environment if it was ever to achieve its full potential.

Site testing teams were sent out to promising locations across the West, including Lick Observatory and Mt. Wilson in California, McDonald Observatory in Texas, the Tucson area, and Lowell Observatory in Flagstaff, Arizona. Ultimately, these site tests lead to the selection of a hilltop five miles west of Flagstaff, both for its excellent observing conditions and other important factors, such as accessibility and the support of the staff at nearly Lowell Observatory, a relationship that continues to this day. The 40-inch telescope was transferred to Flagstaff in late September, 1955, and was quickly installed and brought into full operation.

In the years following the establishment of the Flagstaff Station several new telescopes have been built at the site. These include the 61-inch Kaj Aa. Strand Astrometric Reflector, the largest of its kind in the world; an 8-inch automated transit telescope; and, most recently, a 1.3-meter reflector optimized for wide-field astrometry of cool infrared objects. The venerable 40-inch telescope continues to be used for a number of research projects.

The Flagstaff Station also supports the Navy Prototype Optical Interferometer (NPOI) in collaboration with Lowell Observatory and the Naval Research Laboratory. NPOI combines light from up to 6 smaller telescopes to produce high resolution “zoom lens” views of star systems and the apparent discs of stars. It is also used to measure ultra-precise positions of bright stars for navigational purposes.

Flagstaff Station telescopes have produced the fundamental reference star catalogs used by many Department of Defense programs. Precise astrometry supports weapons guidance, targeting, and space surveillance requirements. These data also provided critical navigation data for NASA missions, such as the recent and hugely successful Mars Exploration Rovers and the Deep Impact mission to Comet Tempel-1. Using the 61-inch telescope, Charon, the only known moon of Pluto, was discovered in 1978. In 2002 the coldest known brown dwarf star was discovered by a Flagstaff Station astronomer.

From its humble beginnings as a small site for an aging telescope, the Naval Observatory Flagstaff Station has evolved into the most respected astrometric observatory in the world.

For further information on the Flagstaff Station, its telescopes, and its research projects, please visit our website at <http://www.nofs.navy.mil>.



The Naval Observatory Flagstaff Station's Main Building houses the 61-inch (1.55-meter) Kaj Aa. Strand Astrometric Reflector, the largest telescope of its kind in the world.